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PERSISTENCE OF THE WEED *EUPHORBIA EXIGUA* IN TEXAS

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ABSTRACT

Collections in 2002 from Kenedy County, Texas, confirm that *Euphorbia exigua* is established as a non-native invasive in the state. Previously it had been known only by a single collection from Nueces County.

KEYWORDS: *Euphorbia exigua*, *Euphorbia peplidion*, Euphorbiaceae, Texas

Continuing studies on the Flora of Texas, especially that for the Atlas of Vascular Plants of the state (Turner et al. 2003) has occasioned the following report.

Johnston (1969) was the first to report the occurrence of *Euphorbia exigua* L. in Texas, based on a collection from 4 miles northwest of Flour Bluff in Nueces County, Texas (*F.B. Jones 2925,* WWR). Subsequently, in an account of *Euphorbia* for the Manual of Vascular Plants of Texas, Correll and Johnston (1970) omitted *E. exigua* from the state's flora with the following observation under the species *E. peplidion* Engelm.: "Plants with a rather superficial appearance to *E. peplidion* but with seeds tuberculate all over are *E. exigua* L., collected once in Nueces Co. (adventive from Old World); probably not a persistent member of our flora." *Euphorbia exigua* was not included in the recent Texas Atlas (Turner et al. 2003), and the quote by Johnston was reiterated in an ongoing account of non-native species naturalized in Texas by the Texas Non-native Plants Group (2011), who concluded that the plant should be "Excluded from the Texas flora." From the comments that follow here, clearly the species should be accepted as part of the introduced flora.

F.B. Jones, who first collected the species in Texas, provided an excellent key to the taxon in his book on the Texas Coastal Bend flora (1982) but did not report any additional collections of the species. The persistence of *Euphorbia exigua* in the Texas flora is well documented by the following two collections.

TEXAS. Kenedy Co.: rare, local, ca. 50 plants in grazed bluestem grasslands on loose gray fine sand of South Texas Holocene Sand Sheet, N side of E-W stretch of road leading to 'Broken Windmill,' ca. 3 mi W of that windmill and ca. 0.5 mi NNE of HQ compound, El Canelo Ranch, 7 Mar 2002, *W.R. Carr 20435* (TEX); [same locality as preceding] but ca. 0.1 mi W to WNW of Broken Windmill, ca. 0.8 NE of HQ compound, 8 Mar 2002, *W.R. Carr 20440* (TEX).

Superficial examination of the above plants might lead to their identification as *Euphorbia peplidion*; indeed, they will key to or near that taxon in Correll and Johnston (1970), but it is clear that they are properly positioned in *E. exigua*. Map 1 shows the distribution in Texas of the native *E. peplidion* and the introduced but closely related *E. exigua*, this based upon herbarium records at LL, TEX.

Since Correll and Johnston (1970) did not provide a descriptive account of the species concerned, I provide the following, based upon the two specimens cited above.

Euphorbia exigua L.

Annual herbs 6–15 cm high. **Stems and foliage** glabrous. **Leaves** oblanceolate, mostly 10–14 mm long, 1.5–2.0 mm wide; upper most leaves mostly larger than lower (15-18 mm long, 2.3 mm wide); petioles indistinct, grading into the blades. **Cyathia** axillary, 1.0–1.5 mm high; peduncles ca 0.5 mm long; appendages 4 or 5, furcated, more or less horseshoe-shaped, ca 0.6 mm long, 1.0 mm wide, the lateral extensions white. **Stamens** 8–10, ca 2 mm long, the filaments glabrous; anthers orbicular, ca 0.25 mm across. **Styles** bifurcate, separate to the base, ca 0.25 mm long. **Mature capsules** glabrous, ca 2.5 mm high, 2.5 mm wide. **Seeds** ovoid, ca 1.5 mm long, 1.2 mm wide, evenly tuberculate-pitted throughout and bounded with minute ornamented ridges.

The following couplet should help in the identification of the taxa concerned:

1. Stem leaves mostly linear-oblanceolate to spathulate; seeds white, smooth, having 4–8 pits ..... **Euphorbia peplidion**
1. Stem leaves mostly linear, acute (rarely not); seeds pale grey, evenly tuberculate ..... **Euphorbia exigua**

Euphorbia exigua (= *Esula exigua* (L.) Haw.; *Tithymalus exiguus* (L.) Hill) also has been recorded as a naturalized member of the California flora (Thomas 1961; Munz & Keck 1968; known only from Santa Clara County), in the Canadian provinces of British Columbia, Ontario, and Nova Scotia (Brouillet et al. 2010+), and in a cluster of states in the northeastern USA — New Jersey, New York, Pennsylvania, West Virginia (USDA, NRCS 2011). It has been documented as a naturalized weed in western Europe and Australia (Randall 2007).

Euphorbia exigua is native to eastern Europe and is known as Dwarf Spurge in the British Isles (Clapham, Tutin, and Moore 1987).

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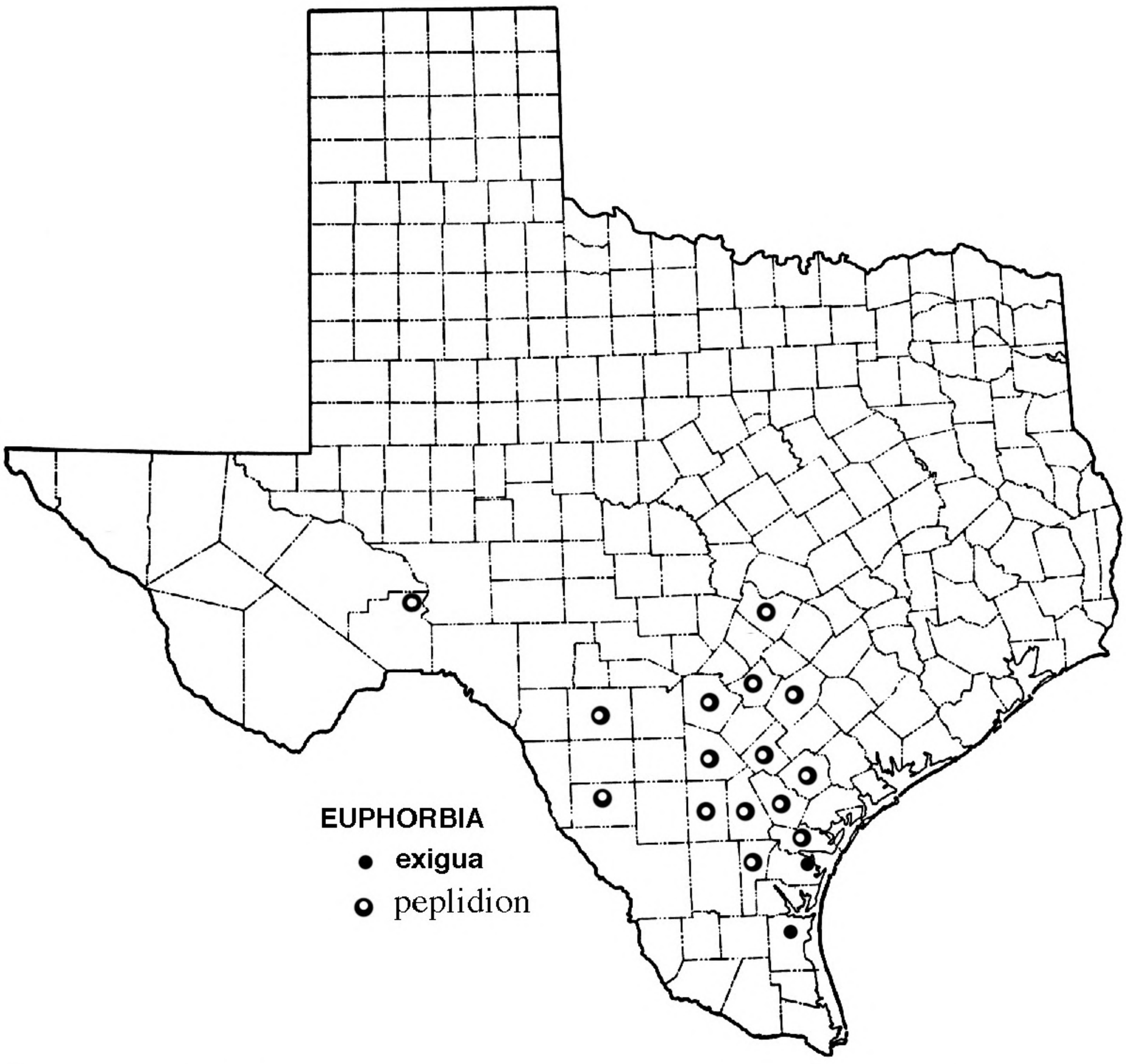

Map 1. Distribution of *Euphorbia peplidion* and *E. exigua* in Texas. Records of *E. exigua* are from Kenedy Co. (as reported here from collections in 2002) and Nueces Co. (from 1969 report).